

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027280**Date Inspected:** 05-Mar-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** jobsite**CWI Name:** Fred Von Hoff**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS project**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and /or monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

Tower Elevation 13-Meters:

This QA Inspector observed ABF welding personnel working at the 13 meter elevation on the Partial Joint Penetration (PJP) welds between the diaphragm plates and shear plates. This QA Inspector was informed by QC Inspector Fred Von Hoff the root passes had previously been completed using the Shielded Metal Arc Welding (SMAW) process. QC Inspector Fred Von Hoff stated the root passes had been previously been inspected using the visual and Magnetic Particle Testing (MT) methods and accepted, but that a MT inspection of the root pass was to be performed within approximately 24 hours of the start of using the Submerged Arc Welding (SAW) to complete the welding. This QA Inspector was informed by QC Inspector Fred Von Hoff that he had performed and accepted the MT inspection on the root passes at weld joints W-101 and W-103 this date. This QA Inspector observed marking on the tower wall adjacent to the weld joints indicating this. This QA Inspector observed the induction heating system was being used to preheat the welding area. This QA Inspector observed the preheat pads covered the length of the weld except for approximately the last 920 mm. This QA Inspector observed QC Inspector Fred Von Hoff using an electronic temperature gauge to verify the preheat temperature of the base metal covered with the induction heaters, which was stated to be 330°F. This QA Inspector randomly observed as ABF welding personnel Danny Ieraci (#3232) started the SAW process at approximately 1330 hours this date. This QA

WELDING INSPECTION REPORT

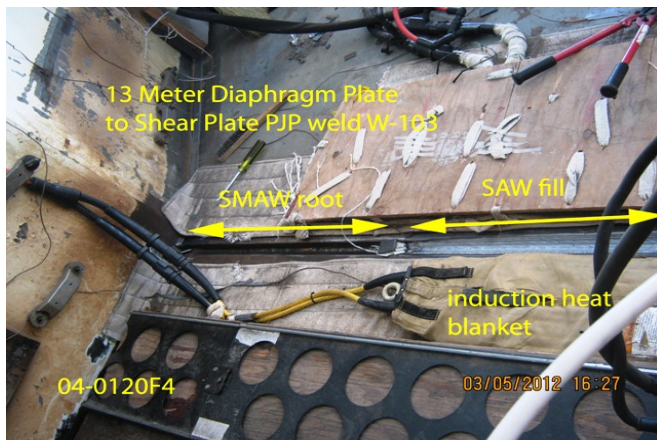
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Inspector randomly observed as QC Inspector Fred Von Hoff verified and informed this QA Inspector of the following welding parameters; 555 amperes and 32.5 volts at a travel speed of 381 mm per minute to produce a heat input value of 2.81 Kj per mm. This QA Inspector reviewed the Welding Procedure Specification (WPS) ABF-WPS-D15-4062-1, being used by QC and the parameters appeared to comply. This QA Inspector performed a random visual verification of the first SAW pass and the welding appeared to comply with the contract requirements.

This QA Inspector randomly monitored the SAW at this location and observed towards the end of the shift the welding was completed except for approximately 1-2 passes. QC Inspector Fred Von Hoff stated he was going to monitor the set up of the induction heating equipment for the 3-hour post weld heat treatment. QC Inspector Fred Von Hoff stated the liquid cooled induction heating equipment, which was being used, allowed a timer to be set for the 3-hour post weld heat treatment period. This QA Inspector was aware ABF personnel had used a similar procedure in the past. This QA Inspector observed the entire weld length appeared to be approximately 2980 mm in length; of which 920 mm had just a SMAW root pass and the remainder (2060 mm) was done except for 1-2 more SAW passes. See photos below.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) personnel, QC personnel and Caltrans personnel during the shift. Except as described above there were no notable conversations.



Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Hager, Craig

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer